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(56) Documents cited
**GB 1504614 A GB 1450570 A GB 1434096 A
GB 1392931 A GB 1045829 A GB 1044730 A
GB 0984183 A EP 0049846 A US 3812884 A
US 3561222 A**

(58) Field of search
**UK CL (Edition J) F2P, H2C
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(54) **Laying duct, pipe or cable**

(57) A method for laying an elongate duct such as a pipe, main or cable beneath a paved surface, the method comprising digging an elongate trench that is wide enough to permit the duct to be placed within the trench, positioning the duct within the trench and then filling the trench in, the trench being no wider than 8" and no narrower than 3". The back fill may comprise an initially flowable material which subsequently solidifies e.g. light weight foamed concrete.

GB 2 213 228 A

The present invention relates to a method for laying an elongate duct such as a pipe, main or cable beneath a paved surface such as a road, pavement or the like.

According to one aspect of the present invention we provide a method for laying an elongate duct such as a pipe, main or cable beneath a paved surface, the method comprising digging an elongate trench that is wide enough to permit the duct to be placed within the trench, positioning the duct within the trench and then filling the trench in, the trench being no wider than 8" and no narrower than 3".

According to another aspect of the invention we provide a method for laying an elongate duct such as a pipe, main or cable beneath a paved surface, the method comprising digging an elongate trench, laying the duct within the trench so formed and then filling the trench in with a material which is flowable when first added to the trench and then subsequently solidifies.

An example of the method will now be described.

The trench is dug with a conventionally available rockwheel type machine such as the Vermeer T-600D rockwheel machine. This machine can be used to dig trenches in any type of ground. It is however, particularly suitable for digging trenches in ground having a paved surface such as a road or pavement covered with an aggregate such as concrete, asphalt, bitumen etc. and is therefore mostly used to dig trenches along roads and pavements and the like. The width of the cutter wheel is selected to conform to the required width of the trench to be dug. Some loose spoil inevitably remains at the bottom of the trench and this must be removed before the conduit is laid within the trench.

This spoil can be removed by an excavator scoop or bucket whose width is such so as to enable it to gain access to the bottom of the trench to remove the spoil. The bucket may form part of the back-hoe of a mechanical excavator so that the spoil can be removed mechanically.

Next the duct is layed within the trench. The duct may be a pipe, main or cable for instance a gas main and in this case may be of a suitable plastics material such as polyethylene. Before the trench is filled in the main should be connected to any feeder mains and to any premises which the main may be required to serve.

Finally the trench is filled in with a suitable infill material and the surface is made good.

The method described can be used to provide a trench which is no wider than 8", possibly no wider than 6" and even no wider than 3". The method can also provide a trench which is at least 2 feet deep, possibly 2 feet 6" deep and even depths of more than 3 feet even 4 feet are possible.

In trenches of these widths and depths it is very difficult if not impossible to provide adequate compaction of the infill material before the surface is made good. This is because the compacting machines cannot easily pass between the walls of the trench. Thus voids may be left in the infill material leading eventually to subsidence at the surface of the trench. To overcome this problem the trench may be infilled with an infill material needing no compaction such as one which is flowable when first added to the trench and which subsequently solidifies.

A suitable material is a light weight foamed concrete such as that known as Trufoam supplied by Tilcon Ltd.

CLAIMS

1. A method for laying an elongate duct such as a pipe, main or cable beneath a paved surface, the method comprising digging an elongate trench that is wide enough to permit the duct to be placed within the trench, positioning the duct within the trench and then filling the trench in, the trench being no wider than 8" and no narrower than 3".
2. A method as claimed in claim 1 in which the trench is no wider than 6".
3. A method as claimed in claim 2 in which the trench is no wider than 4".
4. A method as claimed in any of claims 1 to 3 in which the trench is at least 2 feet deep.
5. A method as claimed in claim 4 in which the trench is 2ft. 6" deep.
6. A method as claimed in claim 5 in which the trench is at least 3 feet deep.
7. A method as claimed in claim 6 in which the trench is up to 4 feet deep and no narrower than 4".
8. A method as claimed in any of the preceding claims in which the trench is dug by means of a Rockwheel machine.

9. A method as claimed in any of the preceding claims in which any loose material remaining within the trench after it has been dug is removed by a scoop before the conduit is positioned within the trench.
10. A method as claimed in any of the preceding claims in which the trench is filled in with a material which is so constituted as to fill in any crevices or voids left in the walls of the trench after it has been dug.
11. A method as claimed in claim 9 in which the trench is filled in with a material which is initially in flowable form when first added to the trench but then eventually solidifies.
12. A method for laying an elongate conduit such as a pipe, main or cable beneath a paved surface, the method comprising digging an elongate trench that is wide enough to permit the duct to be laid within the trench, laying the duct within the trench so formed and then filling the trench in with a material which is flowable when first added to the trench and then subsequently solidifies.
13. A method as claimed in claim 12 in which the trench is dug by means of a Rockwheel machine.
14. A method as claimed in claim 13 in which any loose material remaining within the trench after it has been dug is removed by a scoop before the duct is positioned within the trench.
15. A method substantially as hereinbefore described.